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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,840	01/17/2004	Harry C. Sweere	44374.12.3	8767

22859 7590 11/21/2006

INTELLECTUAL PROPERTY GROUP
FREDRIKSON & BYRON, P.A.
200 SOUTH SIXTH STREET
SUITE 4000
MINNEAPOLIS, MN 55402

EXAMINER

STERLING, AMY JO

ART UNIT	PAPER NUMBER
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3632

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,840

Applicant(s)

SWEERE ET AL.

Examiner

Amy J. Sterling

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 18, 19, 31, 32, 38 and 42 is/are pending in the application.
- 4a) Of the above claim(s) 34-36 and 45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-13, 18, 19, 31-33, 38 and 42 is/are rejected.
- 7) ☒ Claim(s) 7-9, 20-30, 39, 40, 44, 46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This is the **Final Office Action** for application number 10/759,840 Support Arm, filed on 1/17/04. Claims 1-13, 18-36, 38-40, 42 and 44-46 are pending. Claims 34-36 and 45 are withdrawn. This **Final Office Action** is in response to applicant's reply dated 10/5/06. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action.

Claim Rejections - 35 USC § 102

Claims 1-6, 10-13, 18, 19, 31, 32, 38 and 42 are rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent Publication No. 2004/0099779 to Mileos et al.

The Publication to Mileos et al. discloses a support arm having a first strut (23) having a proximal portion, a proximal link (5) pivotally coupled to the proximal portion of the first strut at a first proximal joint, the proximal link having a cam (45, See paragraph 0057 for cam), wherein the first strut is rotatable relative to the cam about the first proximal joint, a cam follower (24) coupled to the first strut, the cam follower contacting a cam surface of the cam at a first contact point, the cam and the cam follower cooperating to apply a cam moment to the first strut, and the cam moment being sufficient to balance a load supported by a distal link (4) which is pivotally coupled to a distal portion of the first strut at a first distal joint wherein the first strut is rotatable

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relative to the distal link about the first distal joint, and a means for urging the cam follower against the cam surface which is a spring (39) and has an adjustment (27, 28) mechanism for varying the energy source (the length of the arm will determine how much the spring must hold and therefore vary the energy source), wherein a strut angle is defined by a longitudinal axis of the first strut and a gravitational pull and the cam moment varies as a function of a trigonometric SIN of the strut angle when the first strut rotates relative to the cam and the contact angle is defined by a line that is perpendicular to the longitudinal axis of the first strut and a tangent line that is generally tangent to both the cam follower and the cam surface and that extends through the first contact point, wherein the cam provides a reaction force supporting the cam follower then the cam follower is urged against the cam and wherein the cam moment is provided by a moment creating component of the reaction force and wherein the spring is extended or compressed as the first strut rotates so that the first distal joint (13) moves in a downward direction, wherein the cam surface has a continually changing slope. (a circular radius is a changing slope) and a second strut (2) having a proximal portion pivotally coupled to the proximal link at a second proximal joint and a distal portion pivotally coupled to the distal link at a second distal joint wherein the first and second strut, the proximal link and the distal line form a parallelogram.

Claim Rejections - 35 USC § 103

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Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Publication No. 2004/0099779 to Mileos et al as applied to claim 32 above and in view of United States Patent Publication No. 6629336 to Hosaka et al.

Mileo et al. discloses the basic inventive concept as shown above with the exception that it does not teach that the spring is a coil spring.

Hosaka et al. teaches a first proximal strut (1) and link (3a) with a coil spring (9) used to counterbalance the gravitational pull of the link, used as a counterbalancing device. Therefore it would have been obvious to one of ordinary skill in the art to have used a coil spring in place of a torsion spring in order to counterbalance the desired load of the link.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

The applicant's arguments pertaining to the rejections under 35 USC 112 first and second paragraph are persuasive and have been withdrawn.

Allowable Subject Matter

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Claims 7-9, 20-30, 39, 40, 44 and 46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

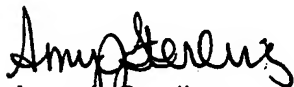
The reason is that the prior art does not teach a spring plate coupled to the spring or that the radius of the cam varies when the first strut rotates relative to the cam or that the radius of curvature of the cam varies when the first strut rotates relative to the cam or that the contact angle of the cam changes when the first strut is rotated relative to the cam. The prior art does not teach wherein the cam is shaped so that the moment creating component of the reaction force varies as the first strut rotates relative to the cam and wherein the cam is shaped so that a trigonometric TAN function of the contact angel varies as a function of the SIN of the strut angle and the cam is shaped so that the deflection of the spring varies as the first strut rotates relative to the cam and the spring deflection varies as a SIN of the strut angle when the first strut rotates relative to the cam. The prior art does not teach the cam to have a continually changing radius of curvature. The prior art does not teach wherein the adjustment mechanism varies the length or the pre-load of the spring.

Conclusion

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action. Any inquiry concerning this communication should be directed to Amy J. Sterling at telephone number 571-272-6823. The fax machine number for the Technology center is 571-273-8300 (formal amendments) or 571-273-6823 (informal communications only). Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist at 571-272-3600.



Amy J. Sterling
Primary Examiner
11/15/06